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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/549,417

05/16/2006

David Ewart Anderson

47256-215557 US1

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10/01/2008

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EXAMINER

CUEVAS, PEDRO J

ART UNIT

PAPER NUMBER

2834

MAIL DATE

DELIVERY MODE

10/01/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/549,417	Applicant(s) ANDERSON ET AL.	
	Examiner PEDRO J. CUEVAS	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 and 49-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 and 49-55 is/are rejected.
- 7) ☒ Claim(s) 21-23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/31/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Invention I – Claims 1-23 and 49-57 in the reply filed on December 19, 2007 is acknowledged.
2. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Response to Arguments

3. Applicant's arguments with respect to claims 1-6, 8-23 and 49-55 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3, 5, 8-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,910,688 to Li in view of U.S. Patent No. 4,132,499 to Igra.

Li clearly teaches the construction of a "roof mountable" windmill, comprising:

a rotor (1) having a plurality of radial blades (11) and a ring-shaped diffuser (10) connecting the outer tips of the blades, wherein the diffuser is shaped such that it inhibits

the partly axial and partly radial airflow from the blades, said airflow becoming circumferential when it contacts the aerofoil diffuser, thereby reducing acoustic emissions.

However, it fails to disclose a diffuser being an aerofoil diffuser.

Igra disclose the construction of a wind driven energy generating device, comprising a rotor having a plurality of radial blades (6) and a ring shaped diffuser (2), wherein the diffuser is an airfoil diffuser (see Figure 1, 2 and 3) and is shaped such that it inhibits the partly axial and partly radial airflow from the blades, said airflow becoming circumferential when it contacts the aerofoil diffuser, thereby reducing acoustic emissions, for the purpose of increasing the power output of the turbine (column 1, lines 20-21).

It would have been obvious to one skilled in the art at the time the invention was made to use the aerofoil shape of the diffuser disclosed by Igra on the windmill disclosed by Li for the purpose of increasing the power output of the turbine.

It has been held that the recitation that an element is “capable of” performing a function, in this case capable of being mounted – “mountable”, is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

It should be emphasized that “apparatus claims must be structurally distinguishable from the prior art.” MPEP 2114. *In re Danly*, 263 F. 2d 844, 847, 120 USPQ 528, 531 (CCPA 1959) it was held that apparatus claims must be distinguished from prior art in terms of structure rather than function. In *Hewlett-Packard Co. v Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), the court held that: “Apparatus claims cover what a device is, not

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what it does” (emphases in original). To emphasize the point further, the court added: “An invention need not operate differently than the prior art to be patentable, but need only be different” (emphases in original).

6. With regards to claim 3, Li disclose the outer tips of the blades being connected to the diffuser at or near to the leading edge of the diffuser.

7. With regards to claim 5, Li disclose at least a portion of the aerofoil diffuser extending upstream from the outer tips of the blades (Figure 2B).

8. With regards to claim 8, it has been held that the recitation that an element is “adapted to” perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

9. With regards to claim 9, Li disclose blades being inclined at an angle relative to a transverse rotor plane perpendicular to the rotational axis of the rotor (Figure 2B).

10. With regards to claim 10, Li disclose the blade’s angle of inclination varies along the length of the blade.

11. With regards to claim 11, Li disclose the angle of inclination of each blade being greater at an intermediate portion of the blade than at the outer tip of the blade (Figure 2B).

12. With regards to claim 12, Li disclose the blades being substantially parallel to the transverse rotor plane at the outer tip of the blades (Figure 2B).

13. With regards to claim 13, Li disclose a nacelle (16) and a mounting means (22). It has been held that the recitation that an element is “adapted to” perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

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14. With regards to claims 14 and 15, Li in view of Igra disclose a non-linear furling means (3) configured to:

rotate the rotor about the directional axis so that the rotational axis is not parallel to the direction of airflow when the airflow speed is greater than a predetermined airflow speed, and

provide no furling over a first lower range of airflow speed and a varying degree of furling over a second higher range of airflow speed.

It should be emphasized that “apparatus claims must be structurally distinguishable from the prior art.” MPEP 2114. *In re Danly*, 263 F. 2d 844, 847, 120 USPQ 528, 531 (CCPA 1959) it was held that apparatus claims must be distinguished from prior art in terms of structure rather than function. In *Hewlett-Packard Co. v Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), the court held that: “Apparatus claims cover what a device is, not what it does” (emphases in original). To emphasize the point further, the court added: “An invention need not operate differently than the prior art to be patentable, but need only be different” (emphases in original).

15. With regards to claims 16 and 17, Li disclose a tail fin (19) extending downstream of the diffuser. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide at least two tail fins extending downstream of the diffuser and diametrically opposite each other, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

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16. Claims 2, 4 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,910,688 to Li in view of U.S. Patent No. 4,132,499 to Igra as applied to claims 1, 3, 5, 8-17 above, further in view of U.S. Patent No. 5,599,172 to McCabe.

Li in view of Igra disclose the construction of a windmill as disclosed above.

However, it fails to disclose the aerofoil diffuser extending downstream from the outer tips of the blades.

McCabe disclose the construction of a wind energy conversion system, comprising an aerofoil diffuser (24) extending downstream from the outer tips of the blades for the purpose of providing more torque at lower operating speeds.

It would have been obvious to one skilled in the art at the time the invention was made to use the aerofoil diffuser disclosed by McCabe on the a windmill disclosed by Li in view of Igra for the purpose of providing more torque at lower operating speeds.

17. With regards to claim 4, McCabe disclose an aerofoil diffuser that tapers outwards from the outer tips of the blades to form a substantially frusto-conical diffuser (Figure 2), the rotational axis of the frusto-conical diffuser is substantially aligned to the rotational axis of the blades.

18. With regards to claim 6, McCabe disclose an aerofoil diffuser that tapers radially outwards as it extends from the upstream end to the downstream end (Figure 2).

19. With regards to claim 7, McCabe disclose an aerofoil diffuser that is shaped such that it inhibits the partly axial and partly radial airflow from the blades, said airflow becoming circumferential when it contacts the aerofoil diffuser. It should be emphasized that “apparatus claims must be structurally distinguishable from the prior art.” MPEP 2114. *In re Danly*, 263 F.

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2d 844, 847, 120 USPQ 528, 531 (CCPA 1959) it was held that apparatus claims must be distinguished from prior art in terms of structure rather than function. In *Hewlett-Packard Co. v Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), the court held that: “Apparatus claims cover what a device is, not what it does” (emphases in original). To emphasize the point further, the court added: “An invention need not operate differently than the prior art to be patentable, but need only be different” (emphases in original).

20. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,910,688 to Li in view of U.S. Patent No. 4,132,499 to Igra as applied to claims 1, 3, 5, 8-17 above, further in view of U.S. Patent No. 5,591,004 to Aylor.

Li in view of Igra disclose the construction of a windmill as disclosed above.

However, it fails to disclose one of the tail fins is a moveable tail fin hingedly mounted for rotation about a tangential hinge line.

Aylor disclose the construction of a turbine support and energy transformation, comprising hinged gates (18) having hinges (28) for the purpose opening the gates and release overflow air when excessive winds are experienced.

It would have been obvious to one skilled in the art at the time the invention was made to use the hinges disclosed by Aylor on the windmill tail fin disclosed by Li in view of Igra for the purpose of allowing the tail fin to be adjusted.

21. With regards to claims 19 and 20, Li disclose a tail fin mounted on a mounting boom (18).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to adding a hinge or adjustable mechanical connection between the boom

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and the nacelle, since it has been held that the provision of adjustability, where needed, involves only routine skill in the art. *In re Stevens*, 101 USPQ 284 (CCPA 1954).

22. Claims 49-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,910,688 to Li in view of U.S. Patent No. 4,132,499 to Igra as applied to claims 1, 3, 5, 8-17 above, further in view of U.S. Patent No. 5,669,758 to Williamson.

Li disclose the construction of a windmill as disclosed above.

However, it fails to disclose means for reducing the operating vibrations caused by harmonic resonance within the turbine, tower and mounting structure.

Williamson disclose the construction of a wind turbine, comprising means (tower section 86 and turning weights 102) for the purpose of providing a dampening force to counteract bowing and vibrations caused by harmonic oscillations.

It would have been obvious to one skilled in the art at the time the invention was made to use the tower section and turning weights disclosed by Williamson on the windmill disclosed by Li for the purpose of providing a dampening force to counteract bowing and vibrations caused by harmonic oscillations.

23. With regards to claim 50, Williamson disclose a nacelle damping system (Figure 4) configured to at least partially isolate the vibrations in the generator and turbine from the tower.

24. With regards to claim 51, Williamson disclose mounting brackets (103) for mounting the turbine on a surface.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use visco-elastic and structural materials in the construction of the brackets, since it has been held to be within the general skill of a worker in the art to select a

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known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

25. With regards to claim 52, Williamson disclose the mounting means being tubular.

26. Claims 53-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,910,688 to Li in view of U.S. Patent No. 4,132,499 to Igra, further in view of U.S. Patent No. 5,669,758 to Williamson as applied to claims 49-52 above, and further in view of U.S. Patent No. 4,377,812 to Göbel et al.

Li in view of Igra in view of Williamson disclose the construction of a windmill as disclosed above.

However, it fails to disclose the tower containing one or more cores of flexible material, such as rubber, with sections with a reduced diameter, which are not in contact with the tower's inner radial surface, such that the reduced diameter sections alternate with normal sized sections, which are in contact with the tower's inner surface thus serving to absorb vibrations in the tower through the energy dissipated in the flexible core before they reach the mounting brackets.

Göbel et al. disclose the construction of a segmented protective shell for tower mounted antennas with vibration damping, comprising a tower (figure 1) which contains one or more cores of flexible material, such as rubber, with sections with a reduced diameter, which are not in contact with the tower's inner radial surface, such that the reduced diameter sections alternate with normal sized sections, which are in contact with the tower's inner surface thus serving to absorb vibrations in the tower through the energy dissipated in the flexible core before they reach the mounting brackets for the purpose of providing vibration damping to tower mounted antennas.

It would have been obvious to one skilled in the art at the time the invention was made to use the tower sections disclosed by Göbel et al. on the windmill disclosed by Li in view of Igra in view of Williamson for the purpose of providing vibration damping to tower mounted antennas.

27. With regards to claim 54, Göbel et al. disclose said rubber core being configured to control the system's resonant frequency out-with the turbine driving frequency by absorption of a range of vibration frequencies.

28. With regards to claim 55, Göbel et al. disclose the cross-sectional shape and length of each of the reduced diameter sections is configured to “tune” the system to remove a range of vibration frequencies from the mounting structure.

It should be emphasized that “apparatus claims must be structurally distinguishable from the prior art.” MPEP 2114. *In re Danly*, 263 F. 2d 844, 847, 120 USPQ 528, 531 (CCPA 1959) it was held that apparatus claims must be distinguished from prior art in terms of structure rather than function. In *Hewlett-Packard Co. v Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), the court held that: “Apparatus claims cover what a device is, not what it does” (emphases in original). To emphasize the point further, the court added: “An invention need not operate differently than the prior art to be patentable, but need only be different” (emphases in original).

29. With regards to claim 56, it should be emphasized that “apparatus claims must be structurally distinguishable from the prior art.” MPEP 2114. *In re Danly*, 263 F. 2d 844, 847, 120 USPQ 528, 531 (CCPA 1959) it was held that apparatus claims must be distinguished from prior art in terms of structure rather than function. In *Hewlett-Packard Co. v Bausch & Lomb Inc.*,

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909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), the court held that: “Apparatus claims cover what a device is, not what it does” (emphases in original). To emphasize the point further, the court added: “An invention need not operate differently than the prior art to be patentable, but need only be different” (emphases in original).

30. With regards to claim 57, it should be emphasized that “apparatus claims must be structurally distinguishable from the prior art.” MPEP 2114. *In re Danly*, 263 F. 2d 844, 847, 120 USPQ 528, 531 (CCPA 1959) it was held that apparatus claims must be distinguished from prior art in terms of structure rather than function. In *Hewlett-Packard Co. v Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), the court held that: “Apparatus claims cover what a device is, not what it does” (emphases in original). To emphasize the point further, the court added: “An invention need not operate differently than the prior art to be patentable, but need only be different” (emphases in original).

Allowable Subject Matter

31. Claims 21-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

32. The following is a statement of reasons for the indication of allowable subject matter.

The prior art of record, taken alone or in combination, does not teaches the construction of a wind turbine as described on and including all the disclosed limitations of dependent claim 21, wherein the moveable tail fin is rotationally biased by biasing means to an at-rest position in which the leading edge of the moveable tail fin is closer to the axis of rotation of the rotor than

the trailing edge of the moveable tail fin, such that the moveable tail fin is angled at an at-rest attack angle to the axis of rotation of the rotor.

Conclusion

33. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PEDRO J. CUEVAS whose telephone number is (571)272-2021. The examiner can normally be reached on M-F from 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E. Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Pedro J. Cuevas/
Examiner, Art Unit 2834
October 2, 2008

/Darren Schuberg/
Supervisory Patent Examiner, Art Unit 2834